

## Goals

The Goals of the Colorado PhysTEC grant are to:

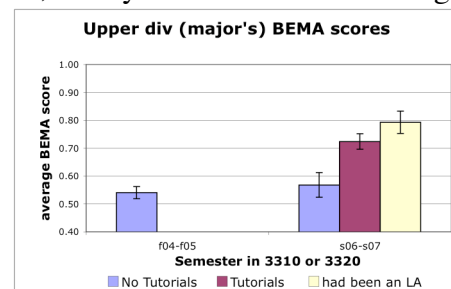
- increase the number of highly qualified teachers of physics
- improve the quality of preparation of these teachers and all students enrolled in physics courses
- study the effects of institutional transformation in order to both measure impact and understand why activities do and do not succeed.

## Successes

- Colorado PhysTEC has been recruiting and supporting the development of future teachers through the Learning Assistant program which supports the transformation of undergraduate introductory courses, and increases access into teaching for physics majors.
- The Colorado program has increased the number of physics and astrophysics majors enrolled in teacher certification from less than one per year to 6 in 2006-2007 (with four more PhysTEC grads recently certified).
- Simultaneously the program has supported the transformation of five undergraduate courses (introductory, non-major, and second year courses). With these transformations students post learning gains as high as three times the national average for traditionally taught courses.
- Colorado PhysTEC has established a variety of partnerships with the local K12 community (from Teacher Advisory Group meetings to summer camps and afterschool programs). The project has brought together a broad array of researchers and educators at Colorado and supports the broader efforts in other science disciplines at achieving similar goals.
- From the outset a primary focus of the Colorado PhysTEC program has been to study what how and why these educational initiatives are effective at increasing student interest and ability in teaching as well as in physics. Current studies are examining what allows these programs to stick (how do new participants adopt effective educational practices) and what makes the Colorado PhysTEC student different from other physics majors or future teachers.
- In its three year history Colorado PhysTEC has produced dozens of papers and talks on the Learning Assistant program, Educational Transformation, and systemic features of change.

Major	Enrollment in certification programs-State of Colorado* 2004-2005 not including LAs	Enrollment in certification programs CU Boulder (2004-2005) Not including LAs	LAs recruited to teacher certification programs 2005-2006
Physics & astrophysics	2	1	9

Colorado PhysTEC has increased the number of CU physics majors going into teaching by almost an order of magnitude



Students in the transformed classes (Tutorials) learn more, Students who LA post the highest scores.

## More information at:

- <http://phystec.colorado.edu>
- <http://stem.colorado.edu/>
- <http://per.colorado.edu>

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